

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A method of rotating data in a plurality of processing elements, comprising:

a plurality of shifting operations performed by a plurality of processing elements connected in an array, each shifting operation being preformed such that each processing element in each row or column receives the data originally held by every other processing element in that row or column, respectively;

a plurality of ~~storing~~ selecting operations performed by said plurality of processing elements after each shifting operation on said received data, where each of the received data is a candidate for selection, said shifting and selecting ~~storing~~ operations coordinated to enable a three shears operation to be performed on the data, ~~and wherein said plurality of storing operations is responsive to each processing element's position in said array.~~

2. (currently amended) The method of claim 1 wherein said plurality of selecting ~~storing~~ operations are responsive to initial counts which are either loaded into at least certain of said processing elements or calculated locally based on the processing element's location.

3. (original) The method of claim 2 additionally comprising maintaining a current count in each processing element for each initial count, said current counts being responsive to said initial counts and the number of data shifts performed.

4. (original) The method of claim 3 wherein said maintaining current counts includes altering said initial counts at programmable intervals by a programmable amount.

5. (original) The method of claim 4 wherein said initial counts are decremented in response to a shifting of data to produce said current counts.

6. (currently amended) The method of claim 5 wherein a selecting ~~storing~~ operation is performed when a current count in a processing element is non-positive.

7. (original) The method of claim 1 additionally comprising selecting which processing elements are active in response to a row select signal and a column select signal.

8. (currently amended) A method of rotating data in a plurality of processing elements connected in an array, comprising:

a first shifting of a ~~first~~ plurality of data in a first direction along one of a row or a column until each processing element in each row or column has received data originally held by every other processing elements in that row or column, respectively;

~~a first storing of data by a first plurality of processing elements~~ a first selection of data from said received data, where each of the received data is a candidate for selection, in response to said first shifting and the positions of said ~~first~~ plurality of processing elements;

a second shifting of ~~a second~~ said plurality of data in a second direction perpendicular to said first direction along one of a row or a column until each processing element in each row or column has received data originally held by every other processing elements in that row or column, respectively;

~~a second storing of data by a second plurality of processing elements~~ a second selection of data from said received data, where each of the received data is a candidate for selection, in response to said second shifting and the positions of said ~~second~~ plurality of processing elements;

a third shifting of ~~a third~~ said plurality of data in a third direction opposite to said first direction along one of a row or a column until each processing element in each row or column has received data originally held by every other processing elements in that row or column, respectively; and

~~a third storing of data by a third plurality of processing elements a third selection of data from said received data, where each of the received data is a candidate for selection, in response to said third shifting and the positions of said third plurality of processing elements;~~

9. (currently amended) The method of claim 8 wherein said first, second and third selection storing of data are responsive to initial counts which are either loaded into at least certain of said processing elements or calculated locally based on the processing element's location.

10. (original) The method of claim 9 additionally comprising maintaining a current count in each processing element for each initial count, said current counts being responsive to said initial counts and the number of data shifts performed.

11. (original) The method of claim 10 wherein said maintaining current counts includes altering said initial counts at programmable intervals by a programmable amount.

12. (original) The method of claim 11 wherein said initial counts are decremented in response to a shifting of data to produce said current counts.

13. (currently amended) The method of claim 12 wherein a selection storing operation is performed when a current count in a processing element is non-positive.

14. (currently amended) The method of claim 8 additionally comprising selecting which of said processing elements are active wherein said first, second and third plurality of processing elements are selected using a row select signal and a column select signal.

15. (currently amended) ~~A method of rotating data in a plurality of processing elements, comprising:~~ The method of claim 8, wherein:

said [[a]] first plurality of shifting and selecting storing operations are coordinated to enable a first shear operation to be performed in said [[a]] first direction in a plurality of processing elements arranged in an array;

~~said [[a]] second plurality of shifting and selecting storing operations are coordinated to enable a second shear operation to be performed in said [[a]] second direction perpendicular to said first direction in said array; and~~

~~said [[a]] third plurality of shifting and selecting storing operations are coordinated to enable a third shear operation to be performed in said [[a]] third direction opposite to said first direction in said array, and wherein said pluralities of storing operations are responsive to each processing element's position in said array.~~

16. - 21. (cancelled)

22. (currently amended) A method of rotating data in a plurality of processing elements connected in an array, comprising:

a first shifting of a ~~first~~ plurality of data in a first pair of directions to enable each processing element in each row or column to receive the data originally held by every other processing element in that row or column, respectively;

a first selecting storing of data by ~~said a first~~ plurality of said processing elements in response to said first shifting and the positions of said ~~first~~ plurality of processing elements, where each of the received data is a candidate for selection;

a second shifting of ~~said a second~~ plurality of data in a second pair of directions perpendicular to said first pair of directions to enable each processing element in each row or column to receive the data originally held by every other processing element in that row or column, respectively;

a second selecting storing of data by ~~said a second~~ plurality of processing elements in response to said second shifting and the positions of said ~~second~~-plurality of processing elements, where each of the received data is a candidate for selection;

a third shifting of ~~said a third~~ plurality of data in said first pair of directions to enable each processing element in each row or column to receive the data originally held by every other processing element in that row or column, respectively; and

a third selecting storing of data by said ~~a third~~ plurality of processing elements in response to said third shifting and the positions of said ~~third~~ plurality of processing elements, where each of the received data is a candidate for selection.

23. (currently amended) The method of claim 22 wherein said first, second and third selecting storing of data are responsive to initial counts which are either loaded into at least certain of said processing elements or calculated locally based on the processing element's location.

24. (original) The method of claim 23 additionally comprising maintaining a current count in each processing element for each initial count, said current counts being responsive to said initial counts and the number of data shifts performed.

25. (original) The method of claim 24 wherein said maintaining current counts includes altering said initial counts at programmable intervals by a programmable amount.

26. (original) The method of claim 25 wherein said initial counts are decremented in response to a shifting of data to produce said current counts.

27. (currently amended) The method of claim 26 wherein a selecting storing operation is performed when a current count in a processing element is non-positive.

28. (currently amended) The method of claim 22 additionally comprising selecting which of said processing elements are active wherein said first, second and third plurality of processing elements are selected using a row select signal and a column select signal.

29. (currently amended) ~~A method of rotating data in a plurality of processing elements, comprising:~~ The method of claim 22 wherein:

said [[a]] first plurality of shifting and selecting storing operations are coordinated to enable a first shear operation to be performed in said [[a]] first pair of directions in a plurality of processing elements arranged in an array;

~~said [[a]] second plurality of shifting and selecting storing operations are coordinated to enable a second shear operation to be performed in said a second pair of directions perpendicular to said first pair of directions in said array; and~~

~~said [[a]] third plurality of shifting and selecting storing operations are coordinated to enable a third shear operation to be performed in said first pair of directions, and wherein said pluralities of storing operations are responsive to each element's position in said array.~~

30. - 35 (cancelled)

36. (currently amended) A computer readable memory device carrying a set of instructions which, when executed, perform a method comprising:

a plurality of shifting operations using a plurality of processing elements connected in an array, each shifting operation being performed such that each processing element in each row or column receives the data originally held by every other processing element in that row or column, respectively; and

a plurality of selecting storing operations using said plurality of processing elements after each shifting operation on said received data, where each of the received data is a candidate for selection, said shifting and selecting storing operations coordinated to enable a three shears operation to be performed on the data, ~~and wherein said plurality of storing operations is responsive to each processing element's position in said array.~~